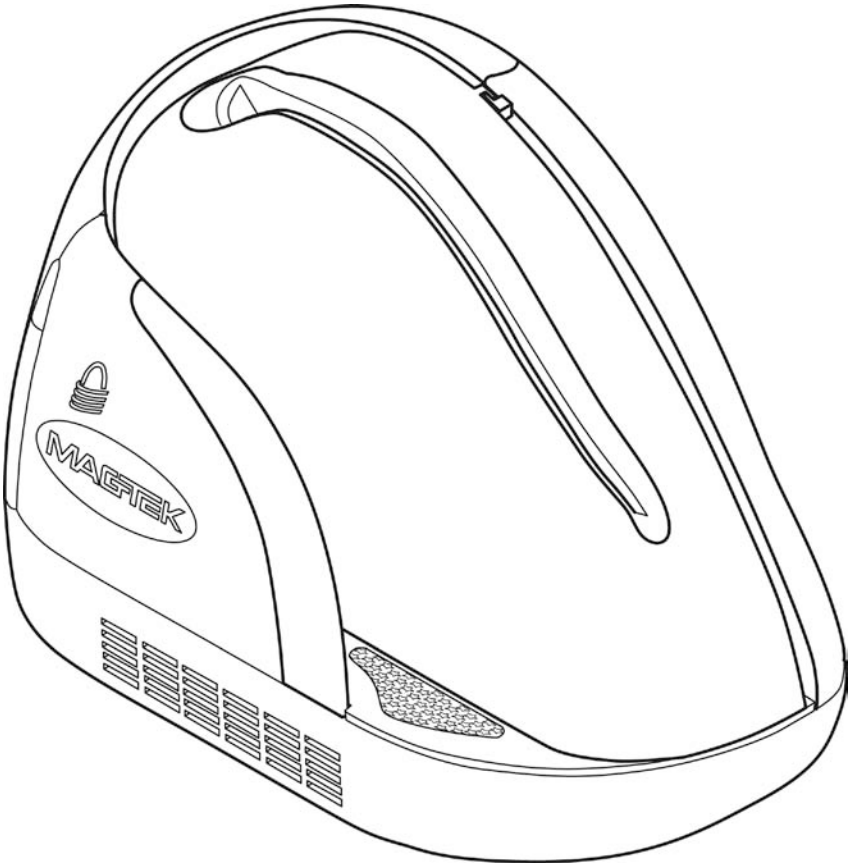
IMAGESAFE SCANNER

MICR READER AND DUAL-SIDED CHECK SCANNER
INSTALLATION AND OPERATION MANUAL



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REVISIONS

Rev Number	Date	Notes
1.01	22 February 2010	Initial Release
2.01	22 February 2010	Product Name Change
3.01	10 March 2010	Requirements p.5 updated; Image added section 2

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SECTION 1. OVERVIEW

The ImageSafe™ Scanner is a single-feed MICR (Magnetic Ink Character Recognition) reader and a dual-sided check scanner. In a single pass, the ImageSafe Scanner reads the MICR characters at the bottom of a check and produces a digitized image of the entire check (front and back). The characters and the image are then transmitted to a host device which is typically a PC.

The ImageSafe Scanner also offers an integrated MagneSafe™ secure card reader to secure card based payment transactions by encrypting the encoded card holder date on debit, credit and gift cards. The MagneSafe reader can be used with a magstripe card for 2-factor authentication during web based financial transactions. The MagneSafe reader will auto-discriminate between different card formats such as: ISO (International Standards Organization) or AAMVA (American Association of Motor Vehicle Administrators).

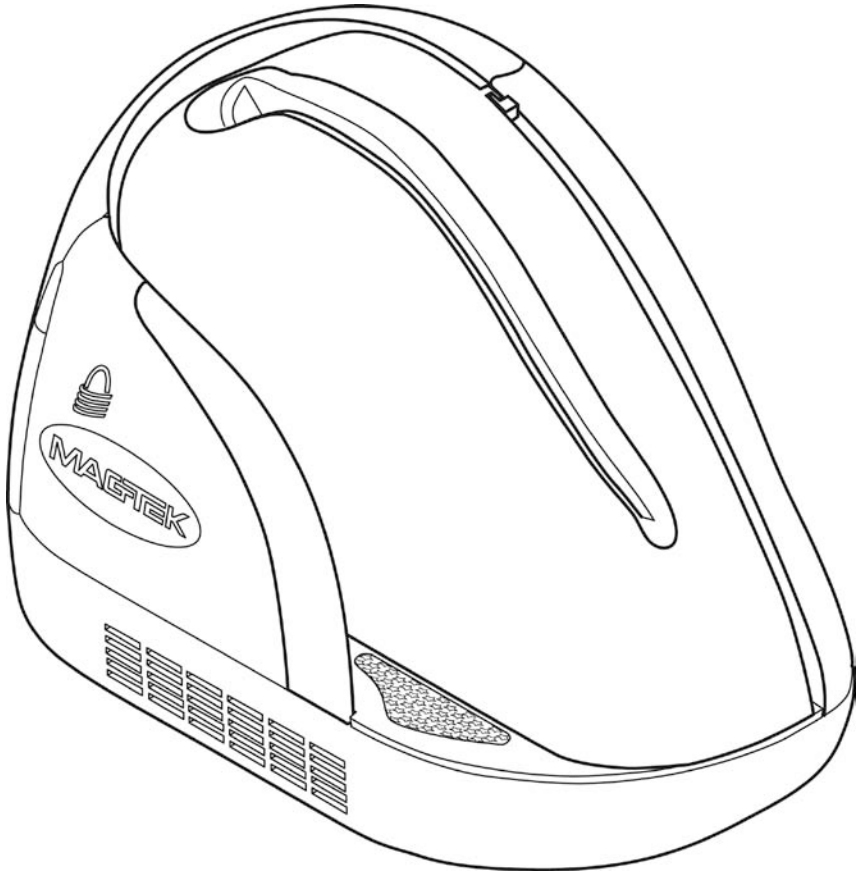


Figure 1-1. ImageSafe Scanner and Dual-sided Scanner with MagneSafe Secure Reader

FEATURES

The ImageSafe Scanner is equipped with the following features:

- Single check feed
- MICR reader with support for E13B and CMC7 fonts
- Automatic parsing of MICR fields: transit, account, etc
- Extensive list of formats to transmit MICR data
- Dual-sided scanning which allows complete images of both sides of a check to be captured
- Image rendition: black/white and grayscale
- Image resolution: 200 dpi
- Image files: TIFF 6.0, JFIF with EXIF tags, BMP
- Image compression: CCITT G4 or JPEG
- Ability to capture up to four images per check
- SHA1 digital signature for image file authentication
- MagneSafe secure card reader
- LED indicator to provide device status
- Cover swings open for easy access to check path and scan bars with no tools required

ACCESSORIES

The following is a list of available accessories for the ImageSafe Scanner:

Part Number	Description
22350300	USB 2.0 A-B BLK 6'
64300090	PWR SUPPLY-DESKTOP, 12VDC 1.5A, 120V (U.S. VERSION)
64300080	PWR SUPPLY-DESKTOP, 12VDC 1.5A, 240V (INT. VERSION)
96530028	SAMPLE CHECKS. PACK OF 5
97200033	CLEANING SWABS
22359069	DEMO SOFTWARE CD
22415101	CLIP-USB/PWR SUP CORDS

Table 1-1. ImageSafe Accessories

SPECIFICATIONS

Table 1-2 lists the specifications for the ImageSafe Scanner.

Table 1-2. Specifications

OPERATING	
Reference Standards	ANSI X9.27
Power Input	12VDC, 1.5 Amp
Current (Operating Idle)	300 mA 1.5 A Max
MTBF	Electronics: 125,000 hours Check Read Head: 1,000,000 passes MSR Read head: 1,000,000 passes
Document Speed	10 ips
Document Size	4"x 9" Maximum 3"x 2.625" Minimum
Image Resolution	200 dpi
MICR fonts supported	E13-B CMC-7
Interface Options	USB 2.0 or USB 1.1
MECHANICAL	
Dimensions	Length 9.0”, Width 3.9”, Height 6.0”
Weight:	2.2 lbs.
Connector:	USB B
ENVIRONMENTAL	
Temperature Operating Storage	 0^{o}C to 50^{o}C (32^{o}F to 122^{o}F) -30^{o}C to 70^{o}C (-22^{o}F to 158^{o}F)
Humidity Operating Storage	 10% to 90% non-condensing Up to 100% non-condensing
Altitude Operating Storage	 0 -10,000 ft (0 - 3,048m) 0 - 50,000 ft (0 - 15240m)

SECTION 2. INSTALLATION

Installation of the ImageSafe Scanner is described below figure 2-1 shows a cad being swiped through the MagneSafe card reader.

Note: Install the ImageSafe software before connecting the ImageSafe Scanner to a computer. Failure to perform this step will prevent the ImageSafe application from installing properly.

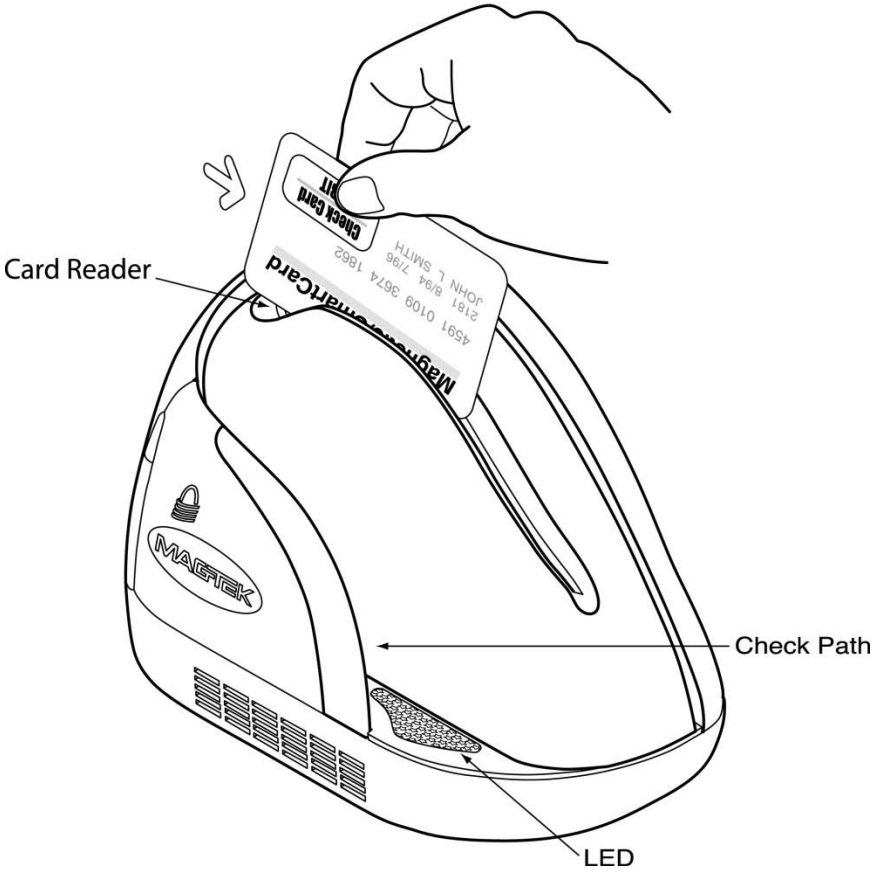


Figure 2-1. ImageSafe Component Identification

REQUIREMENTS

The following items should be present in ImageSafe Scanner box and will be required for installation:

- ImageSafe Scanner
- Hi-Speed USB Cable
- Power Adapter
- Installation software CD (optional)

CABLING PROCEDURE

To connect the ImageSafe Scanner to a local computer locate the power and USB cables contained in the box. Once the cables have been located perform the following steps:

1. Connect the USB plug to the ImageSafe Scanner as shown in Figures 2-2 and 2-4.
2. On the AC power adapter, connect the power plug to the device
3. On the AC power adapter, connect the plug to wall outlet
4. The LED indicator on the ImageSafe Scanner should turn on to a steady green. The LED indicator on the ImageSafe Scanner is located on the slot where the check is first inserted for reading (see figure 2.1). If the LED does not turn green refer to the LED indication section.

Caution

Do not place the ImageSafe Scanner within 6 inches of a computer monitor or power supply. These devices may cause undesirable interference with the check reading operation.

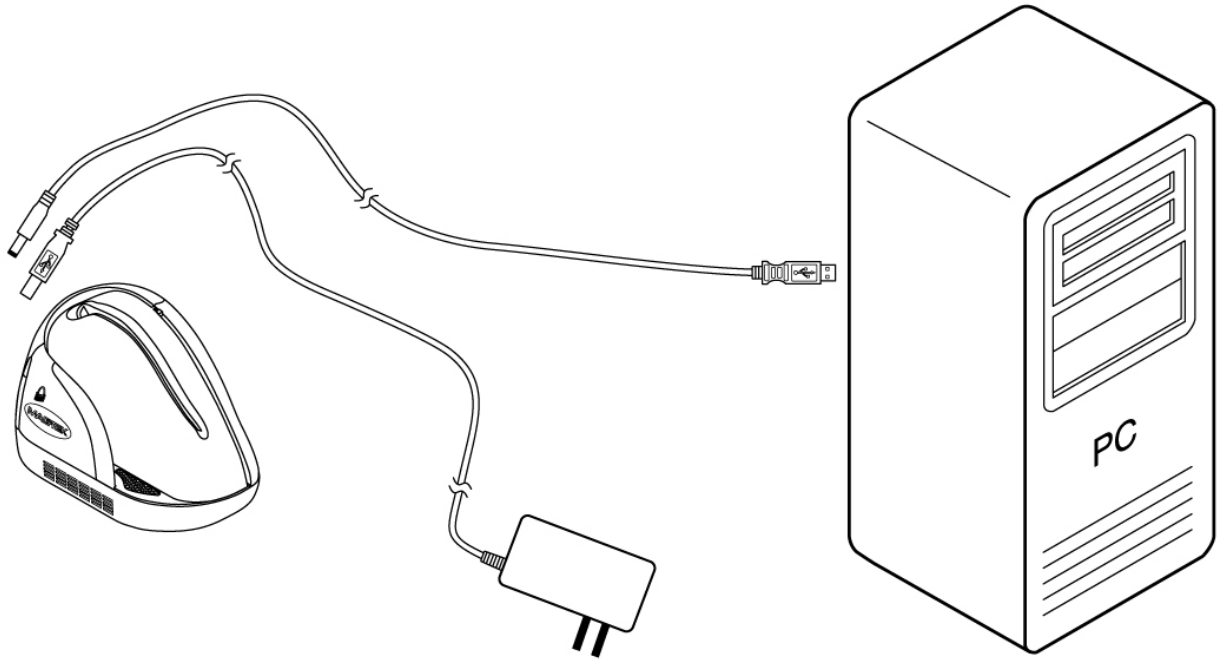


Figure 2-2. ImageSafe Cabling (U.S. Version)

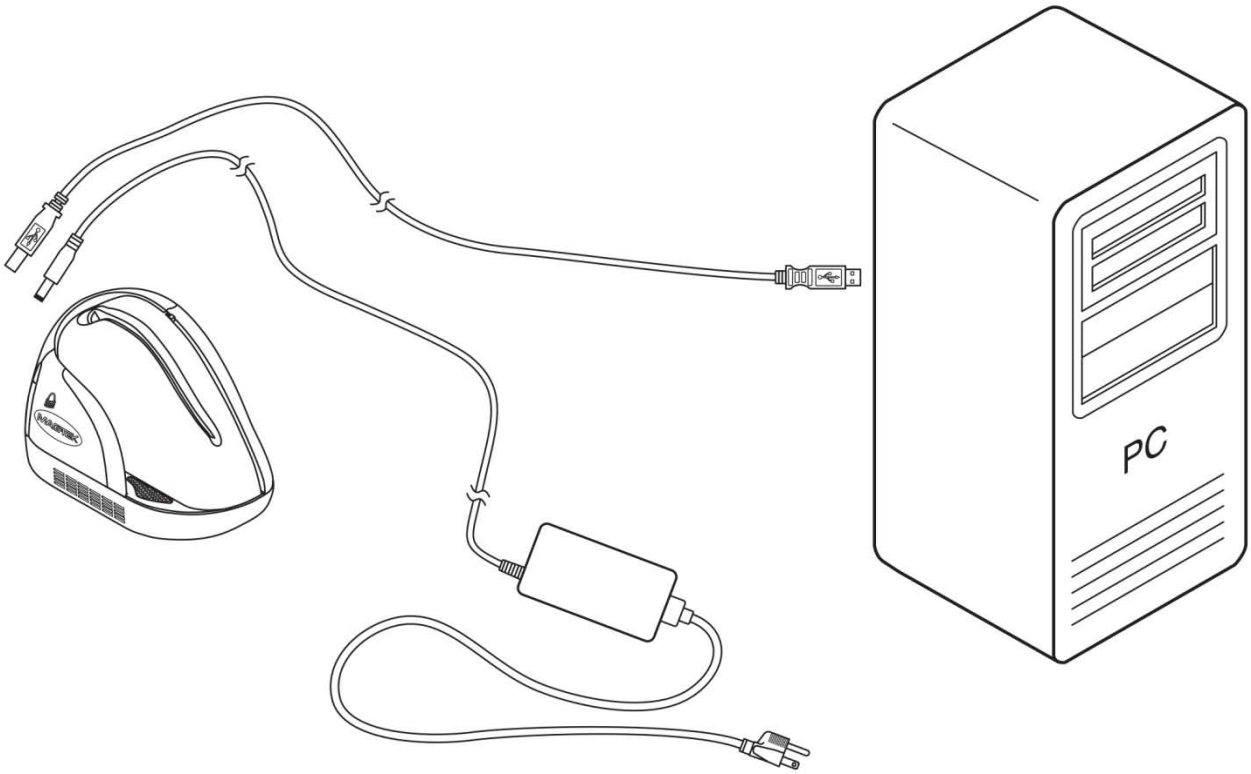


Figure 2-3. ImageSafe Cabling (International Version)

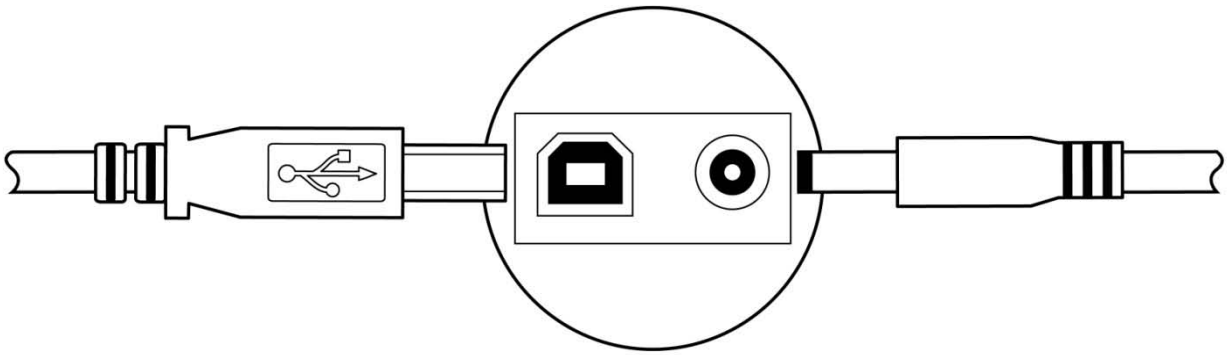


Figure 2-4. ImageSafe Connections

Note: An optional strain relief clip can be installed to securely attach the USB and power supply cable to the ImageSafe chassis. To install the clip insert the cables into the retaining clip and then plug the clip with cables into the ImageSafe. Figure 2-5, indicates the correct location for each cable.

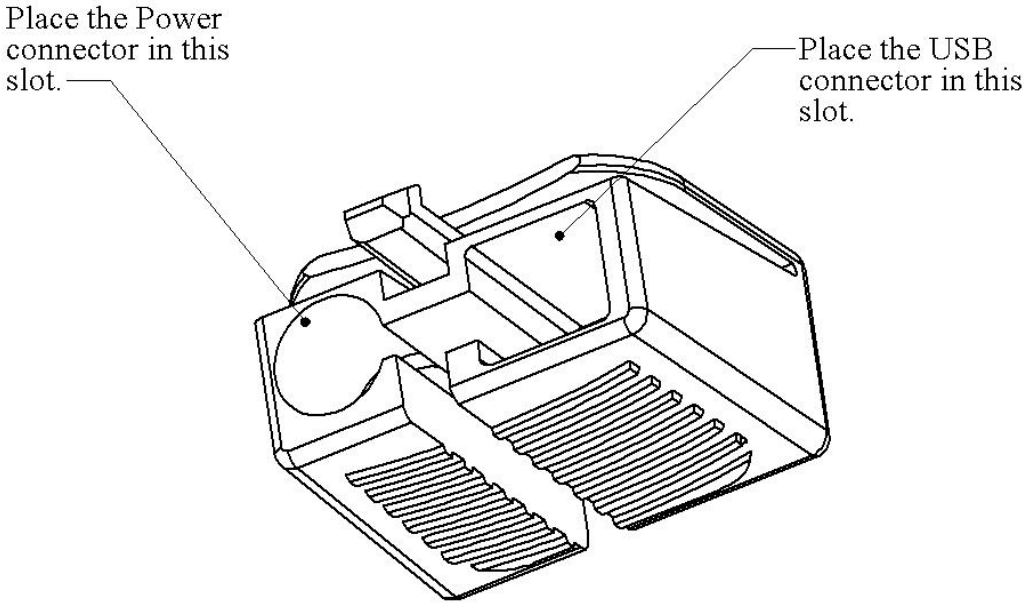


Figure 2-5. ImageSafe Cable Clip

SECTION 3. OPERATION

This section contains check/ card reading procedures, the LED indicator states and cleaning procedures.

CHECK READING PROCEDURE

1. Orient the check so the MICR line is down and the printed side faces the center of the ImageSafe Scanner as indicated in Figure 3-1. For more information about the MICR line refer to Appendix A.

2. Place the check so the leading edge is in the open slot. Slide the check forward.

3. When the ImageSafe Scanner detects the presence of the check, the motor will turn on. At this time press the check forward until the unit grabs the check. When this happens, release the check. The check will then be transported around the check path and will exit through the other side.

4. After the check is read, the ImageSafe Scanner will transmit the data as specified by its configuration parameters.

5. Remove the check.

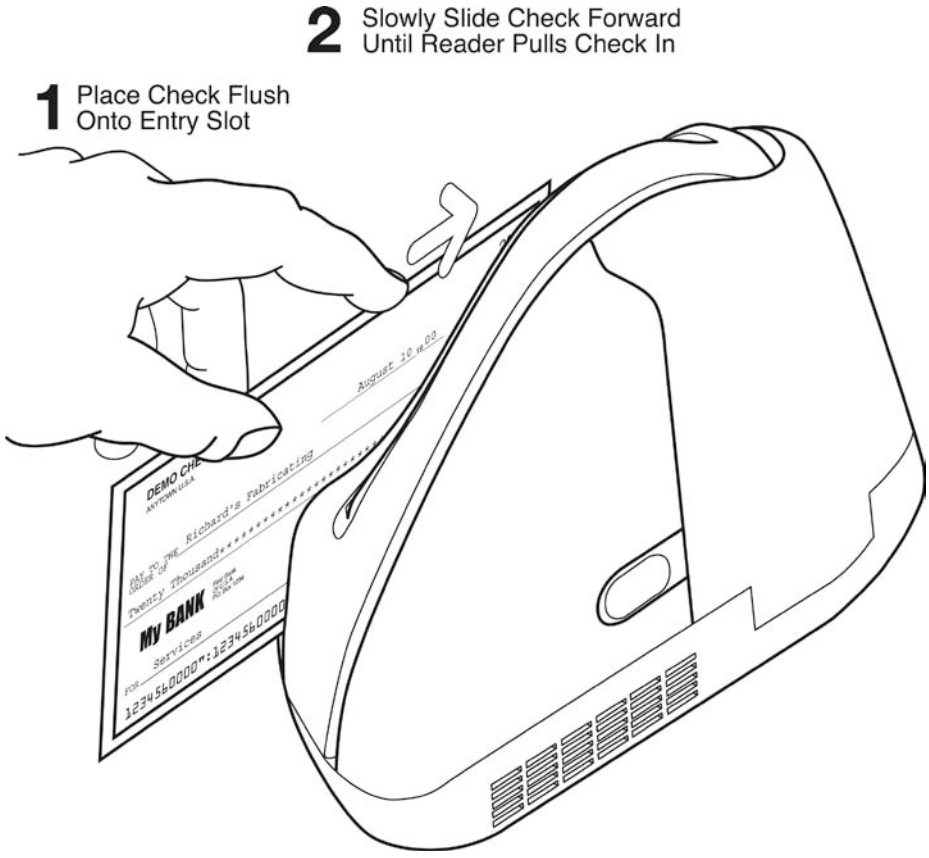


Figure 3-1. Check Orientation - Insertion

CARD READING PROCEDURE

1. Orient the card so that the magnetic stripe is down and facing away from the logo on the unit and toward the wide color stripe on the MagneSafe reader, as indicated in Figure 3-2.

2. Slide the card in one motion from the top of the unit down through the slot as indicated in the illustration.

3. After the card is read, the ImageSafe will transmit the data as specified by its parameters.

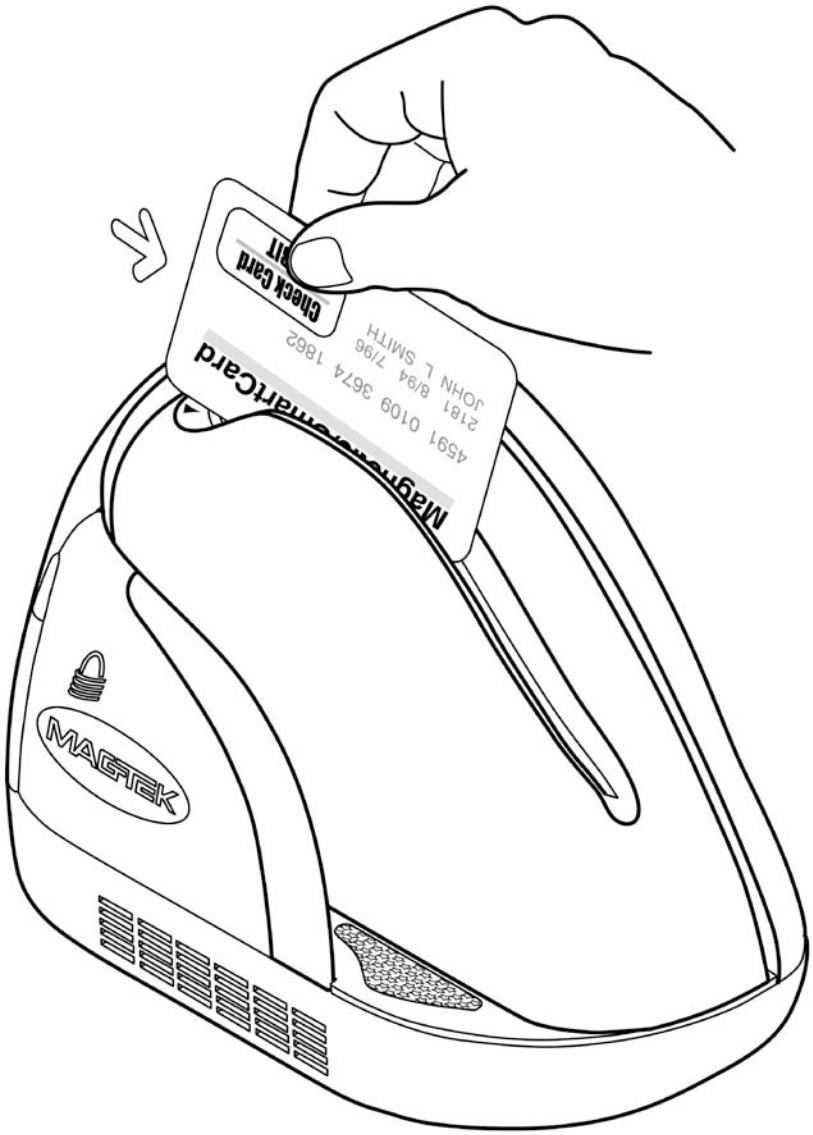


Figure 3-2. MagneSafe Reader Swipe

LED INDICATORS

Table 3-1 describes the LED indicator conditions for check and card reading operations. The LED indicator is located below the slot where the check is first inserted for reading.

Table 3-1. LED indicators

LED INDICATOR	DESCRIPTION
OFF	Power off
SOLID GREEN	Ready to process check or card
BLINKING GREEN	Ready to process check scan or card swipe Collected data is valid and correct
BLINKING AMBER	Check is being processed
SOLID RED	Error collecting data or data is invalid
BLINKING RED	Paper Jam

*Refer to "Section 4. Troubleshooting Guide."

CLEANING

Clean the outside of the ImageSafe Scanner with a soft, damp cloth and wipe with a dry cloth.

Caution

To avoid damaging the read head, do not touch the inside of the check or card paths with a wet cloth.

Use the Cleaning Swab, P/N 97200078, to clean the Scan Bars as shown and described in the next section.

Opening the Unit

To open the check path and gain access to the Scan Bars, grip the ImageSafe Scanner hold the unit as shown in Figure 3-3. Press the access latch button with your thumb and the access door will pop open.

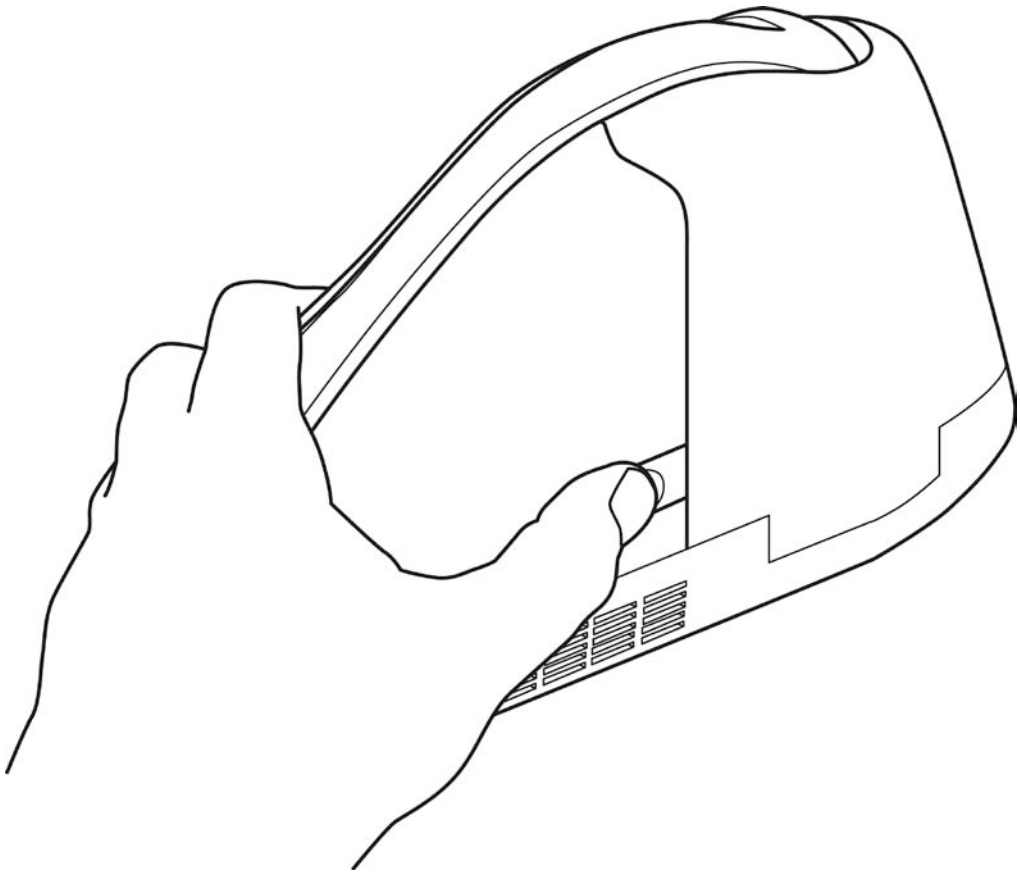


Figure 3-3. Opening the Unit

Cleaning Check Path and Scan Bars

1. When the check path access door is open, as shown in Figure 3-4, check the path for debris. To clean, turn the unit over and tap gently on the bottom.

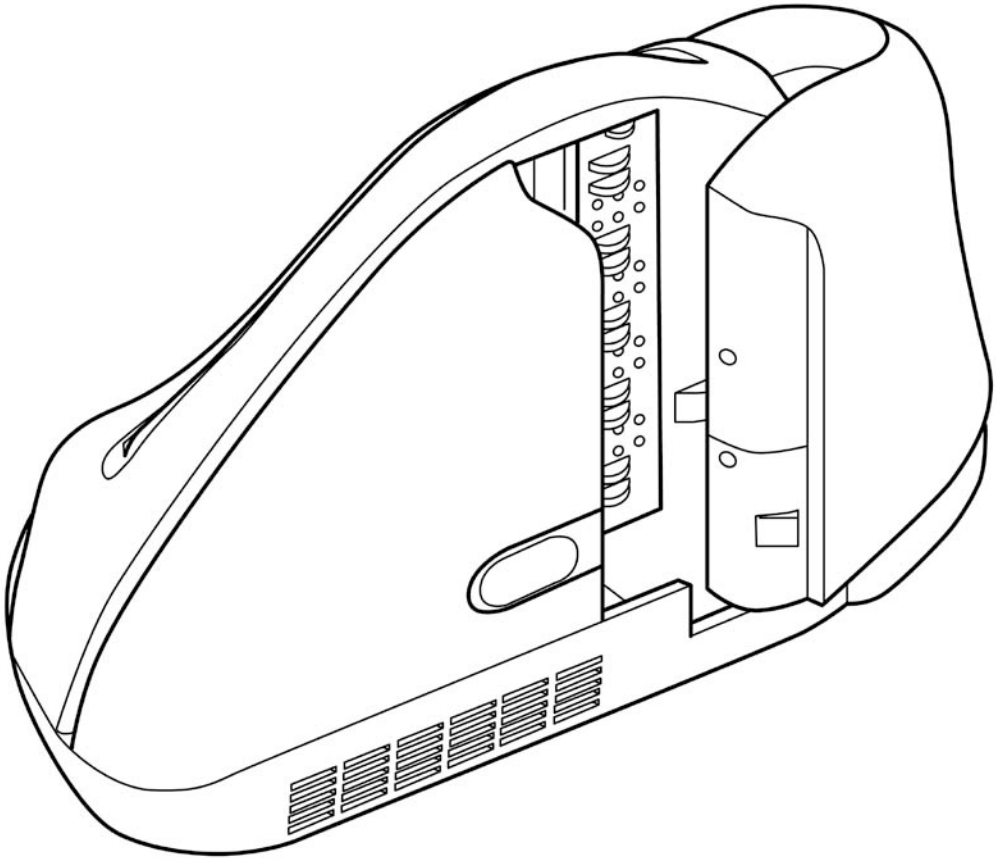


Figure 3-4. Cleaning Check Path and Scan Bars

2. Check the scan bars to ensure there is no build-up of ink or paper debris.

3. To clean the scan bars, use the cleaning swab, shown in Figure 3-5. Activate the swab by bending the plastic tube until you hear a snap.

4. Wait until the liquid moves into the sponge tip. It should be damp when touched.

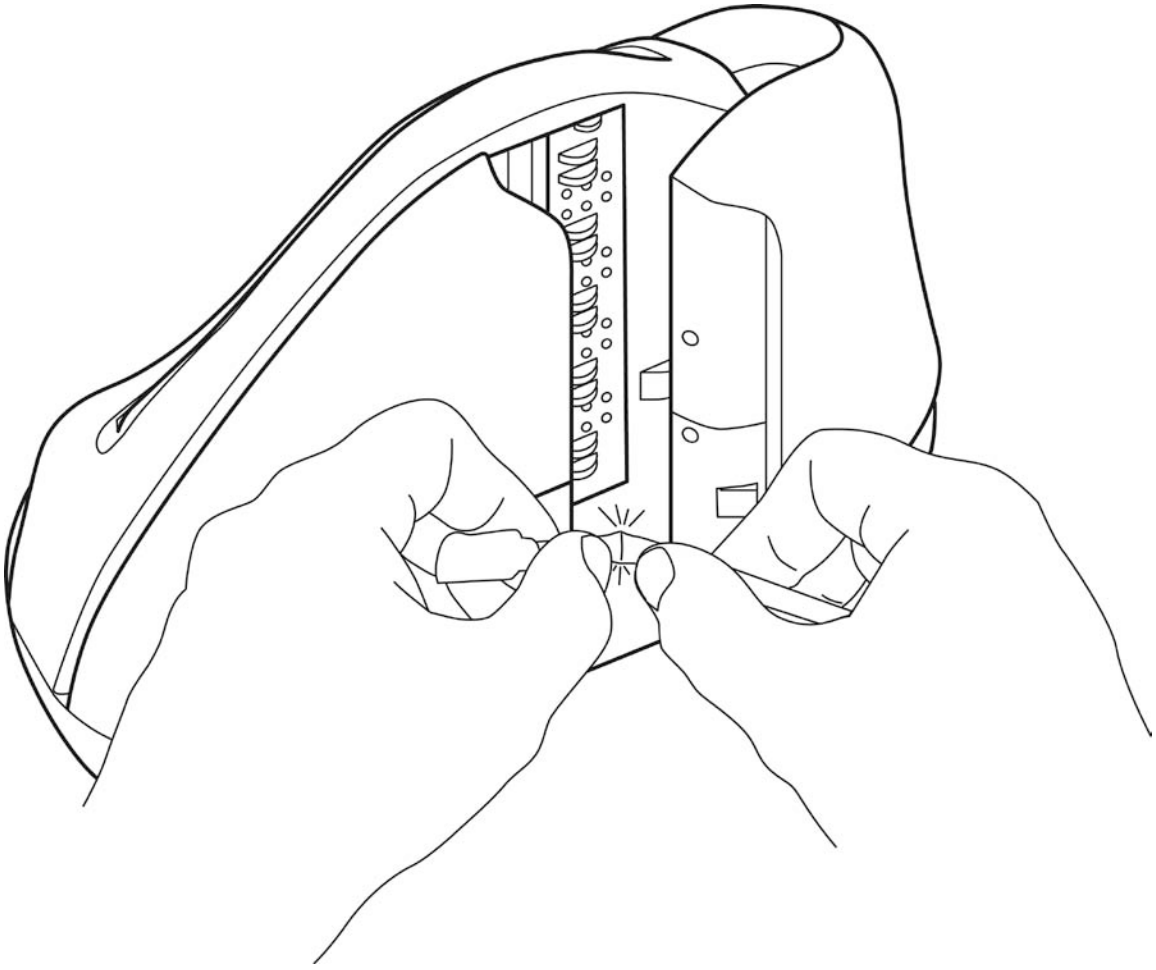


Figure 3-5. Activating the Cleaning Swab

5. When the tip of the swab is damp, clean the first scan bar by wiping the swab up and down the scan bar surface as indicated in Figure 3-6.

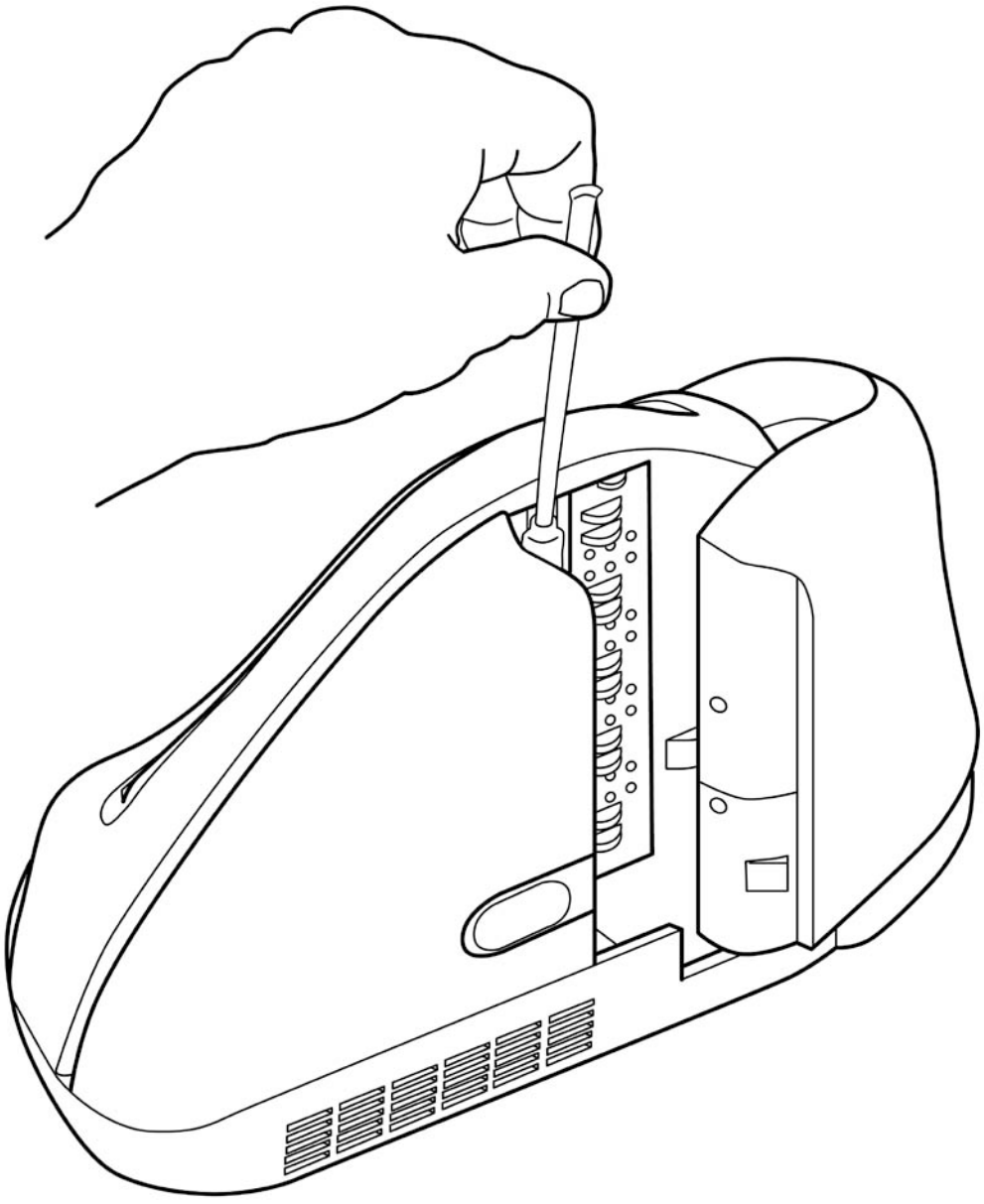


Figure 3-6. Cleaning the First Scan Bar

6. After cleaning the first scan bar, clean the second scan bar by again wiping the swab up and down the scan bar surface as indicated in Figure 3-7.

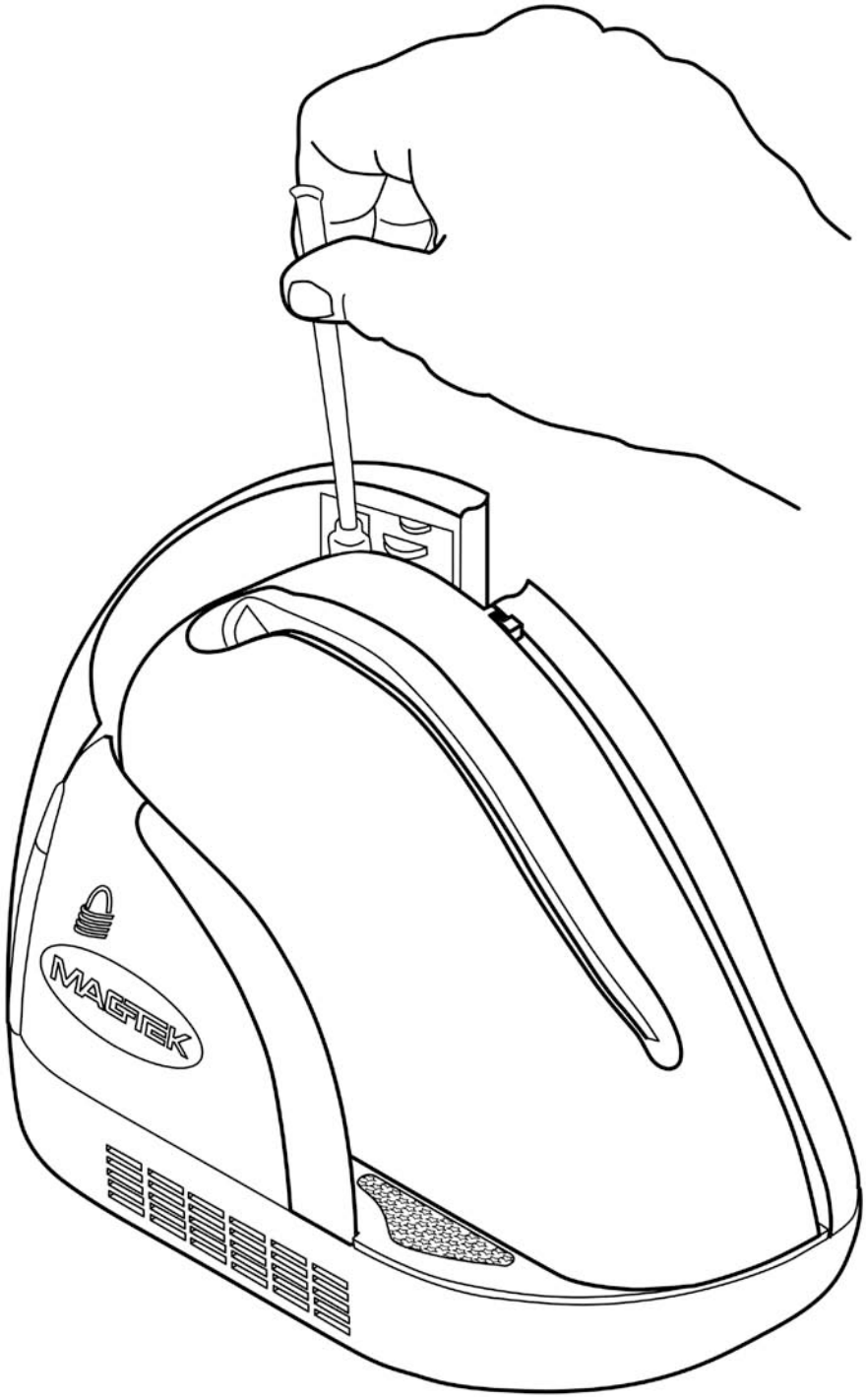


Figure 3-7. Cleaning the Second Scan Bar

Closing the Unit

1. Hold the unit as shown in Figure 3-8. Push the rear access door closed with the right hand while holding on the opposite side with the left hand.

2. The unit is properly closed when the two panels are flush and the latch has "**clicked**" into position.

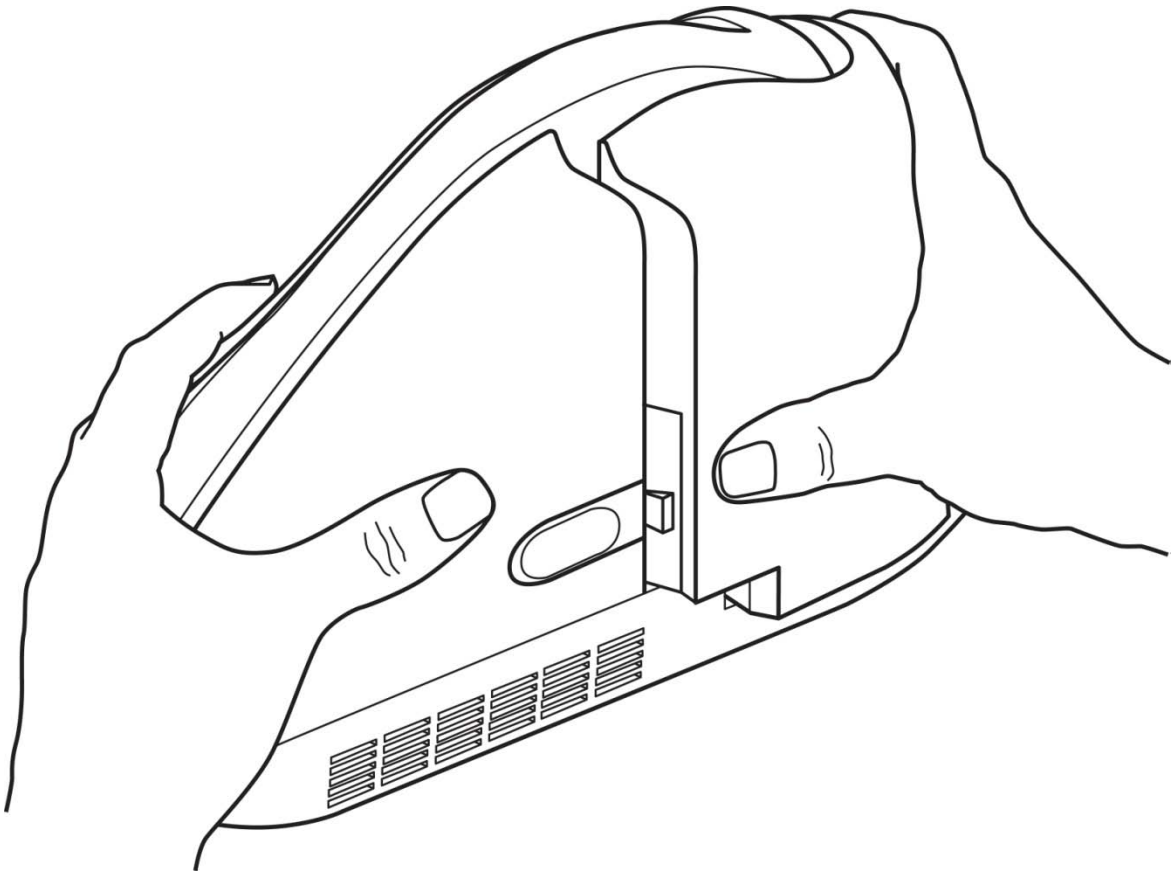


Figure 3-8. Closing the Unit

SECTION 4. TROUBLESHOOTING GUIDE

REQUIREMENTS

- Personal Computer.
- USB Interface Cable, Part Number: 22350300
- AC adapter, Part Number: 64300090 (U.S) or 64300080 (International)
- Sample checks, Part Number: 96530005.

SET-UP

1. Plug USB cable into the ImageSafe Scanner.
2. Plug the other end of the USB cable into the PC.
3. Power on the ImageSafe Scanner.
4. Start trouble-shooting procedure at Step 00.

TROUBLESHOOTING

00	**Check LED**

Check the status of the LED indicator:

◊ Off, continue to step 01.
◊ Green, continue to step 02.
◊ Blinking red, continue to step 07.
◊ Red, continue to step 12.

01	**Check the Power to the ImageSafe Scanner**

Possible causes for this problem are:

- AC adapter connection to outlet - make sure the AC adapter is securely connected to outlet on the wall or power strip.
- AC adapter connection to ImageSafe Scanner - make sure the AC adapter is securely connected to the power jack on the Cable.
- Power strip - if using a power strip, make sure the strip is connected to outlet on the wall and the switch on the strip is turned on.
- AC adapter is defective - replace the AC adapter.

Determine if any of the conditions described above are true:

◊ If yes, rectify and continue to step 00.
◊ If no, continue to step 12.

02	**Read a check**

Read a check through the ImageSafe Scanner:

◊ If the check is transported all the way around the check path, continue to step 03.

◊ If the check gets "stuck" in the check path, continue to step 06.
◊ If the motor does not turn on, continue to step 12.

03	Did PC receive data?

After the check is read, did the PC receive any data?
◊ If yes, continue to step 04.
◊ If no, verify that USB cable is connected

04	Analyze data

Analyze the data received by the PC:
◊ If the data is good, continue to step 10.
◊ If the data contains one or more '?', continue to step 05.

05	Read error

Possible causes for this problem are:
- Interference - the ImageSafe may be too close to a monitor, AC adapter or magnetic device. Move the ImageSafe away from the source of interference.
- Printing problem - the check being read may not meet the requirements of the ANSI Standards. Use one the sample checks provided by MagTek.
- Feeding the check - do not hold on to the check as it goes around the path. Release the check immediately after the ImageSafe "grabs" it. Also, make sure that the front end is not tilted up while the check is being read.

Determine if any of the conditions described above are true:
◊ If yes, rectify and continue to step 02.
◊ If no, continue to step 06.

06	**Path is obstructed**

Foreign debris obstructing the check path:

- Loose debris - power off the ImageSafe Scanner and refer to Section 3, Check Path Cleaning.
- Wedged debris - the debris is wedged in and cannot be removed with the procedure described above.

Is the foreign debris removable?

◊ If yes, remove and continue to step 02.
◊ If no, continue to step 12.

07	**Blocked sensor or data error**

One of the sensors may be blocked by dust build-up or foreign debris (see Figure 4-1 for sensor location) or an error occurred when the MICR\card data was read. To resolve the issue try reinserting the check or re-swiping the card if this does not work process to the sensor.

Use canned air to clean the sensor if this does not work proceed with the steps below.

Power off the ImageSafe Scanner and then power on again, observe the LED indicator:

◊ If the LED indicator blinks red, continue to step 12.
◊ Any other LED indicator status, continue to step 00.
◊ If the LED indicator blinks red/green, continue to step 12.
◊ Any other LED indicator status, continue to step 00.

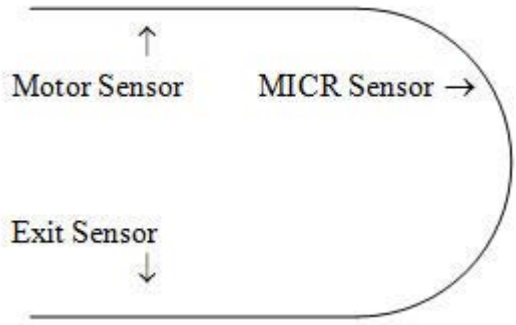


Figure 4-1. Sensor Location

08	No MICR data detected

Possible causes for this problem are:

- No MICR characters - the ink used to print the MICR characters does not have magnetic properties. Try one of the sample checks provided by MagTek.
- Feeding the check - When feeding the check, make sure that the MICR line is at the bottom and the printed side of the check is facing the MagTek logo on the ImageSafe Scanner.

Determine if any of the conditions described above are true:

◊ If yes, rectify and continue to step 02.
◊ If no, continue to step 09.

09	Cable problem

Possible causes for this problem are:

- Loose connection - the cable connector on the PC or the ImageSafe Scanner may be loose. Make sure that both connectors are tightly connected.
- Damaged cable - the connectors, pins or wires in the cable may be damaged. Replace cable.

Determine if any of the conditions described above are true:

◊ If yes, rectify and continue to step 02.
◊ If no, continue to step 12.

10	No problem found

The ImageSafe Scanner is operating properly. If you have additional concerns or requirements please contact your MagTek representative.

11	Read Insta-Change check

Read Insta-Change check with the appropriate settings. Return to step 00. If condition persists, continue to step 12.

12	**Return ImageSafe Scanner to MagTek**

Possible causes for this problem are:

- USB cable is not connected
- The computer is turned off
- Sensor board is damaged
- Power connection failure

The ImageSafe Scanner has a problem that needs further analysis, testing, and possibly repair. Please contact the MagTek Help Desk at (888) 624-8350, and make arrangements to send the unit back to MagTek. Include a detailed description of the problem.

APPENDIX A. CHECK READING

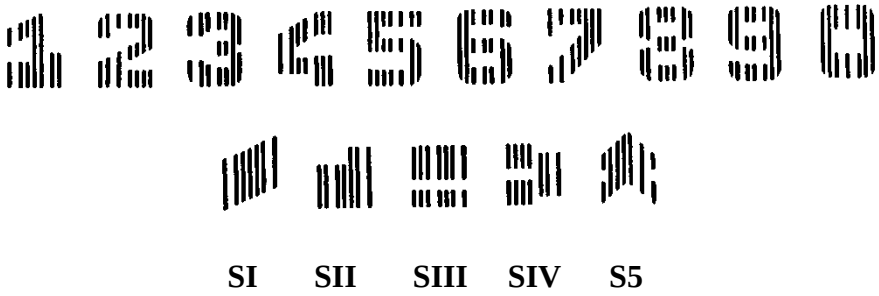
The characters printed on the bottom line of commercial and personal checks are special. They are printed with magnetic ink to meet specific standards. These characters can be read by a MICRImage Reader at higher speeds and with more accuracy than manual data entry. Two MICR character sets are used worldwide; they are: E13-B and CMC-7. The E13-B set is used in the US, Canada, Australia, United Kingdom, Japan, India, Mexico, Venezuela, Colombia, and the Far East. The CMC-7 set is used in France, Spain, other Mediterranean countries, and most South American countries.

E13-B CHARACTER SET

The MICR font character set E13-B includes digits 0 through 9 and four symbols. The numbers found on U.S. checks are of the E13-B character set. The numbers and symbols of E13-B are as follows:

CMC-7 CHARACTER SET

The numbers and symbols of the CMC-7 character set are as follows:



The nonnumeric CMC-7 characters are translated by the ImageSafe Scanner as shown in Table A-1.

Table A-1. CMC-7 Nonnumeric Characters

CMC-7 Character	MICRImage Reader Output
SI	A
SII	B
SIII	C
SIV	D
SV	E

CHECK LAYOUTS

Personal checks with MICR fields are shown in Figure A-1. Business checks are shown in Figure A-2. The digits 1 through 4 in the illustrations are described below under MICR Fields.

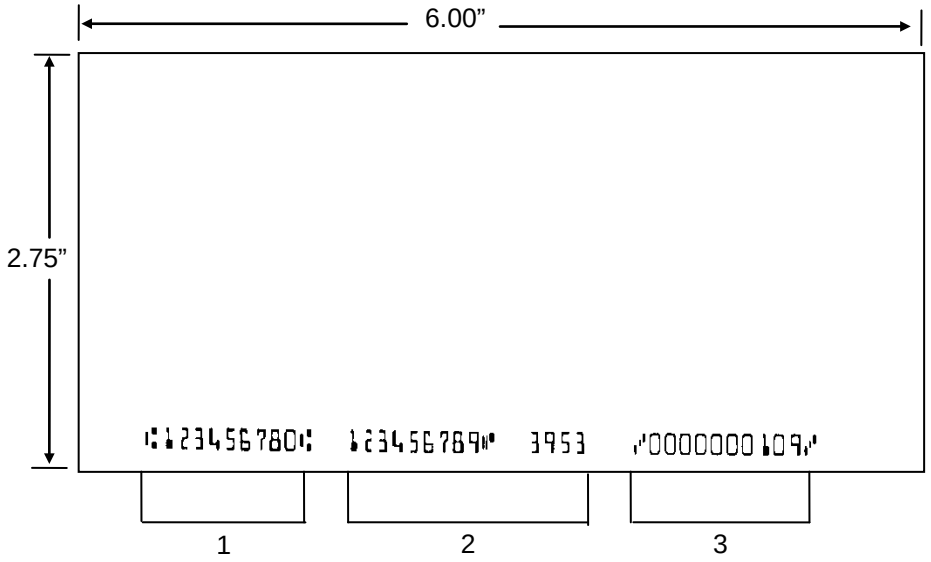


Figure A-1. Personal Checks

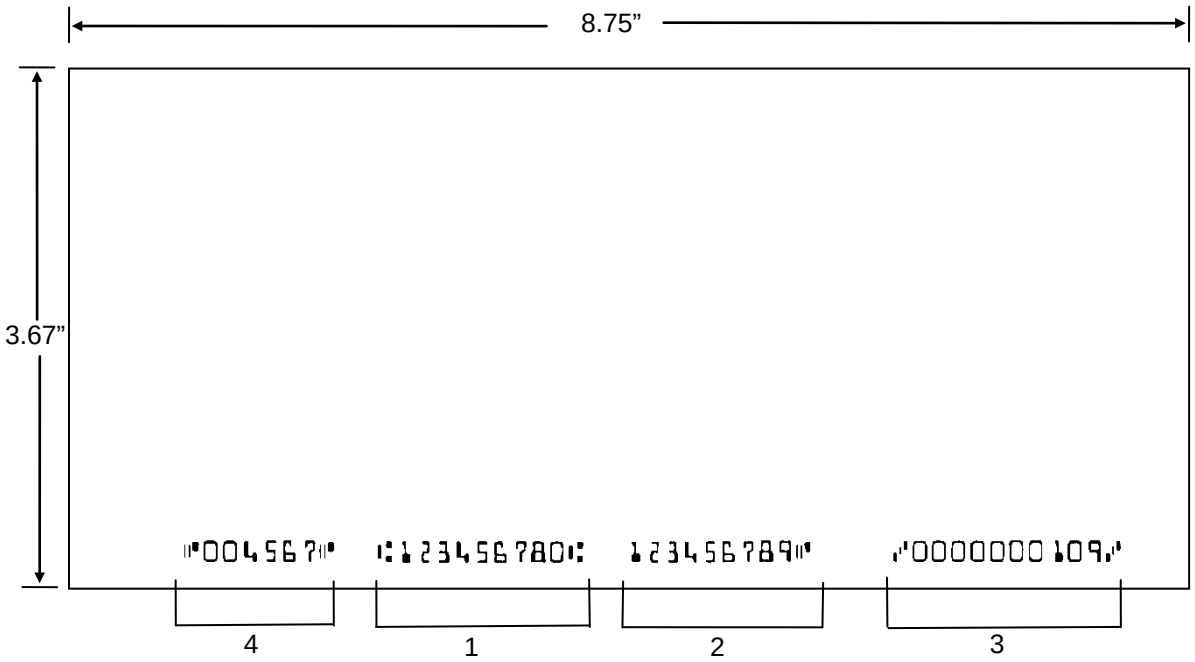


Figure A-2. Business Checks

MICR FIELDS

The numbers 1 through 4 refer to the numbers below the checks on the illustration and represent the 4 MICR fields.

1-Transit Field

The Transit field is a 9-digit field bracketed by two Transit symbols. The field is subdivided as follows:

- Digits 1-4 Federal Reserve Routing Number
- Digits 5-8 Bank ID Number (American Banking Association)
- Digit 9 Check Digit

2-On-Us Field

The On-Us field is variable, up to 19 characters (including symbols). Valid characters are digits, spaces, dashes, and On-Us symbols. The On-Us field contains the account number and may also contain a serial number (Check number) and/or a transaction code. Note that an On-Us symbol must always appear to the right of the account number.

3-Amount Field

The Amount field is a 10-digit field bracketed by Amount symbols. The field is always zero-filled to the left.

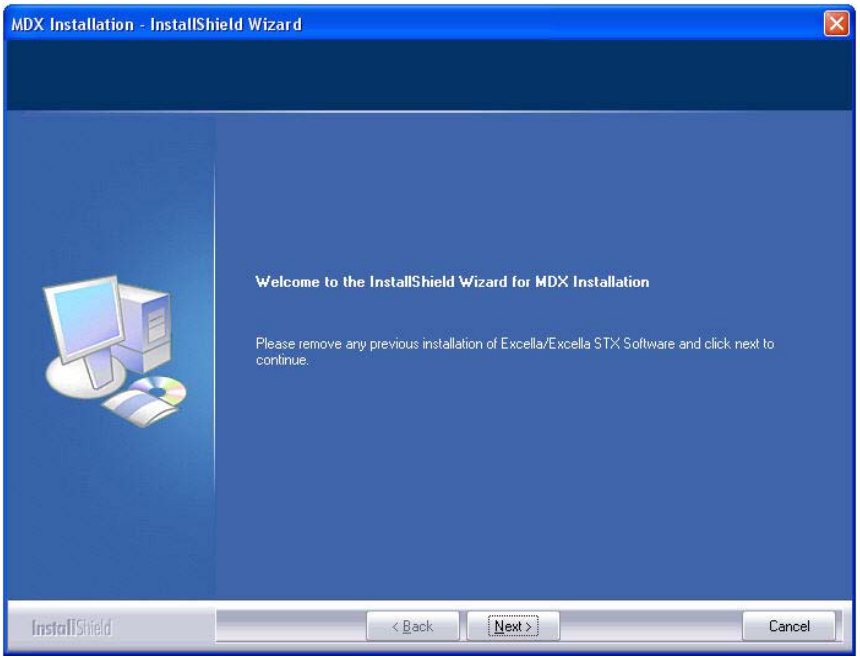
4-Auxiliary On-Us Field

The Auxiliary On-Us field is variable, 4-10 digits, bracketed by two On-Us symbols. This field is not present on personal checks. On business checks, this field contains the check serial number.

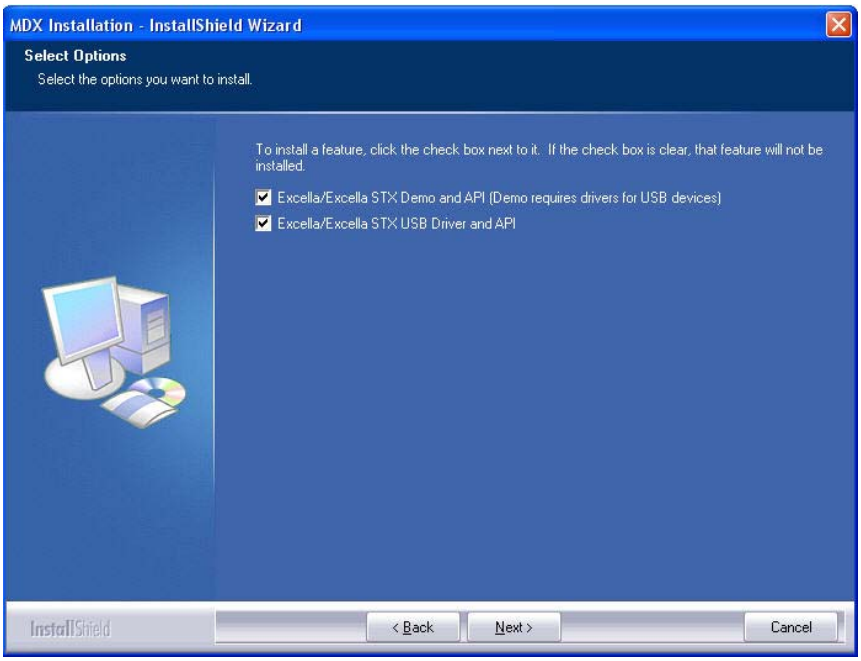
APPENDIX B. DEMO SOFTWARE AND USB DRIVERS

To install the ImageSafe Scanner USB drivers and Demo software follow the steps below:

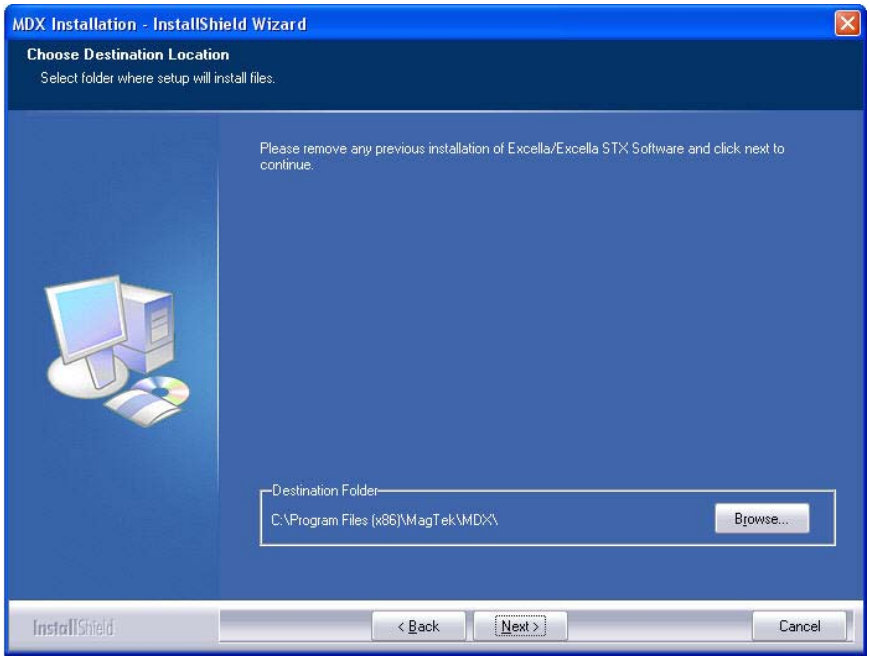
1. Insert the installation software CD into your computer's CD-ROM (or download software directly from the MagTek website: www.magtek.com); the installation application will automatically begin and the screen below will appear. Press [Next] to continue the installation process.


MDX Installation - InstallShield Wizard
Welcome to the InstallShield Wizard for MDX Installation
Please remove any previous installation of Excella/Excella STX Software and click next to continue.
InstallShield
< Back
Next >
Cancel

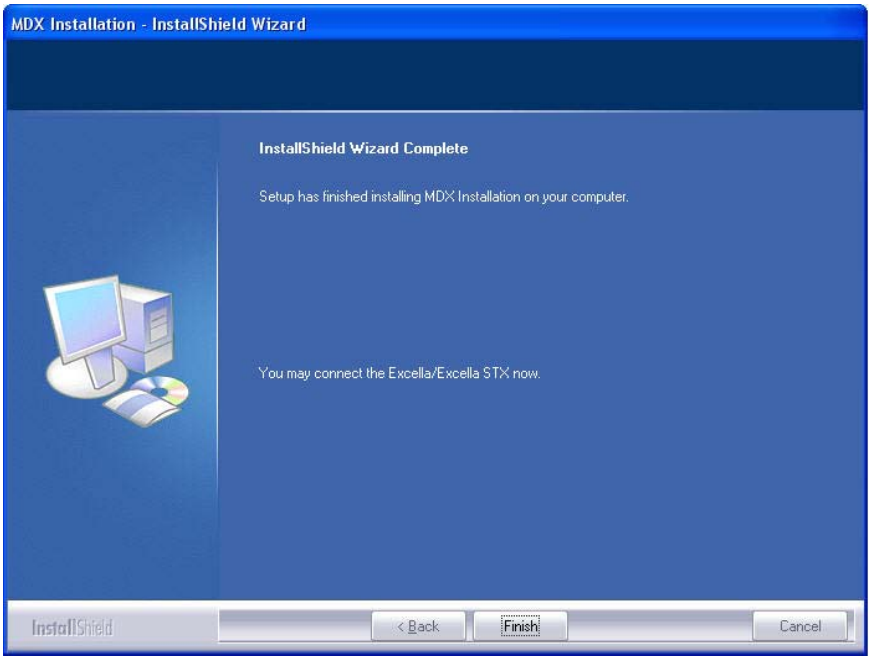
2. At the “Select Options” screen shown below check the options you wish to install and press [Next] to proceed with the installation.


MDX Installation - InstallShield Wizard
Select Options
Select the options you want to install.
To install a feature, click the check box next to it. If the check box is clear, that feature will not be installed.
Excella/Excella STX Demo and API (Demo requires drivers for USB devices)
Excella/Excella STX USB Driver and API
InstallShield
< Back
Next >
Cancel

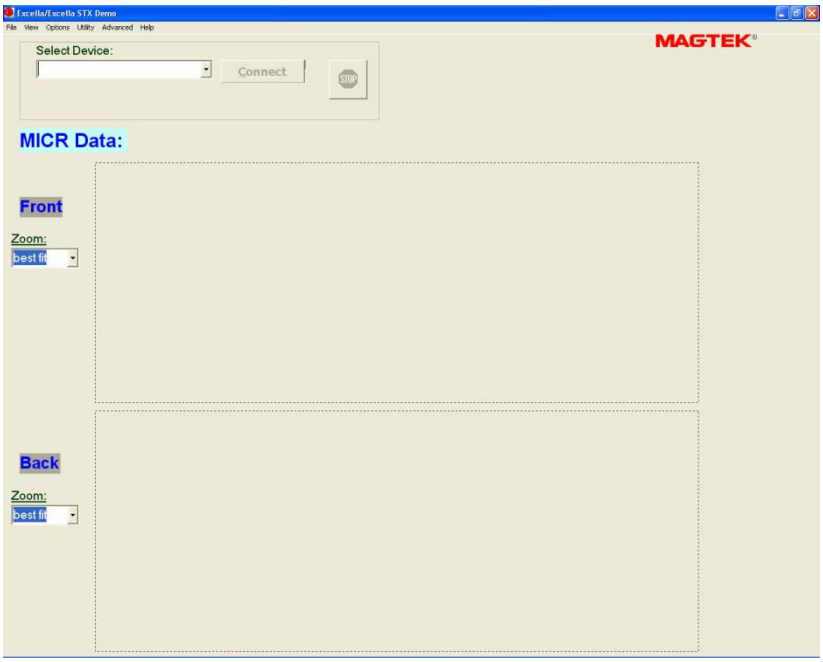
3. The next step in to select the software installation location. Press [Browse] to select a location or press [Next] to except the default location and proceed with the installation.


MDX Installation - InstallShield Wizard
Choose Destination Location
Select folder where setup will install files.
Please remove any previous installation of Excella/Excella STX Software and click next to continue.
Destination Folder
C:\Program Files (x86)\MagTek\MDX\
Browse...
InstallShield
< Back
Next >
Cancel

4. The ImageSafe software is now installed press [Finish] to complete the installation process.



Once the demo software has been successful loaded the ImageSafe demo program can be used. To use the demo program, click on the Microsoft Windows Start button. Then navigate to the demo program by clicking on: All **Prorgams→MagTek→Excella** and **Excella STX→Demo Program**. When the Demo program is selected the window below will be shown.



Select '**Excella MDX.MDX001**" from the [Select Device] drop down menu as shown below and press connect; the demo software is now ready to use simply insert a check or swipe a card.

Notes: